

# Patrick Bitterman

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## Education

The University of Iowa

Iowa City, IA

8/2011 – present    Doctor of Philosophy: Geography, *Expected May 2015*

8/1999 – 5/2001,    Bachelor of Science Degree: Geography, Concentration: GIScience

8/2009 – 8/2011

## Selected Courses

- Ecosystem Services
- Spatial Analysis and Location Models
- Conservation in Human-dominated Landscapes
- Applications in Remote Sensing
- Environmental Justice
- Special Topics: Sustainability Indicators

## Research Interests

- Trade-offs between sustainability and resilience in social-ecological systems
- Adaptive capacity
- GIScience
- Resource extraction
- Geography of food production

## Research Experience

The University of Iowa

Iowa City, IA

9/2011 – present    **Graduate Research/IGERT Trainee**

- Research assistant on NSF grant *CNH: People, Water, and Climate: Adaptation and Resilience in Agricultural watersheds* (David Bennett, PI)
- Assist with development of theoretical framework to model system dynamics and resilience
- Develop agent-based model coupling physical and economics processes with land use decisions
- Perform literature searches and reviews, synthesize findings as white papers
- Attend research team meetings and present findings as necessary

9/2010 – 5/2011    **Undergraduate Research Assistant**

- Provided research support to Primary Investigators on the grant *Mapping Hazards and Mitigation Infrastructure for the City of Des Moines, IA*
- Prepared geographic datasets using ArcGIS software suite
- Developed and validated cost-estimation models for tornado damage paths

## Presentations

5/2013

**Bitterman, Patrick.** Operationalizing Resilience: A Modeling Framework to Build State Spaces and Find Basins of Attraction. Annual Workshop: Geoinformatics for Environmental and Energy Modeling and Prediction, Iowa City, IA.

4/2013	<b>Bitterman, Patrick</b> (Presenter), David Bennett. Operationalizing Resilience Using a Coupled Agent-Based Model of a Generalized Social-Ecological System. Annual Meeting of the Association of American Geographers (AAG), Los Angeles, CA.
4/2013	Bennett, David (Presenter), <b>Patrick Bitterman</b> . Measuring Sustainability and Identifying Windows of Opportunity. Annual Meeting of the Association of American Geographers (AAG), Los Angeles, CA.
8/2012	<b>Bitterman, Patrick</b> . A New Framework for Operationalizing Resilience in Coupled Natural and Human Systems. Annual Workshop: Geoinformatics for Environmental and Energy Modeling and Prediction, Iowa City, IA.
5/2011	<b>Bitterman, Patrick</b> . Developing a Spatial Model of Estimated Tornado Damage for Des Moines, IA. Spring Undergraduate Research Festival. Iowa Center for Research by Undergraduates, Iowa City, IA.

## Honors & Awards

3/2013	<b>Travel Grant:</b> Graduate Student Senate	\$300
2/2013	<b>Travel Grant:</b> Center for Global and Regional Environmental Research	\$900
8/2011 – present	<b>IGERT Fellowship</b> , Geoinformatics for Environmental and Energy Modeling and Prediction, <i>The University of Iowa</i>	n/a
	<b>President's List</b> , Spring semester 2011	n/a
	<b>Dean's List</b> , four semesters	n/a
9/2010 – 5/2011	<b>Research Fellowship</b> , <i>Iowa Center for Research by Undergraduates, The University of Iowa</i>	n/a

## Service

	The University of Iowa	Iowa City, IA
3/2013 – Current	<b>Grant Reviewer, Executive Council of Graduate and Professional Students</b>	
	<ul style="list-style-type: none"> <li>• Evaluate grant applications for merit according to organizational guidelines</li> <li>• Make funding recommendations for proposed projects</li> </ul>	
9/2012 – Current	<b>Graduate Student Representative to Faculty</b>	
	<ul style="list-style-type: none"> <li>• Attend faculty meetings as the representative for graduate geography students</li> <li>• Provide student perspective on curriculum, policies, and student development</li> <li>• Act as liaison between faculty and students as required</li> </ul>	
9/2012 – 5/2013	<b>International Health Hiring Committee, Graduate Student Representative</b>	
	<ul style="list-style-type: none"> <li>• Evaluated candidates for International Health Faculty position</li> <li>• Synthesized and presented graduate student viewpoints on individual candidates to the faculty</li> <li>• Met with candidates to discuss their perspectives on graduate student mentoring and development</li> </ul>	
12/2010 – 5/2011	<b>Technical Coordinator</b> , <i>Iowa City Community Integrative Geography Organization (ICIGO)</i>	
	<ul style="list-style-type: none"> <li>• Provided technical assistance and consultation to the organization</li> <li>• Trained staff in project management techniques and best practices</li> </ul>	
10/2010 – 5/2011	<b>Vice President</b> , <i>Undergraduate Geography Association</i>	
	<ul style="list-style-type: none"> <li>• Organized activities to promote the Department of Geography to undergraduate students at The University of Iowa</li> </ul>	

- Managed events such as study sessions, class registration forums and finals week support for underclassmen

9/2010 – 5/2011 **Undergraduate Student Representative to Faculty**

- Attended faculty meetings as the representative for undergraduate geography students
- Acted as liaison between faculty and students as required

## **Prior Professional Experience**

### **Geater Machining and Manufacturing**

**Independence, IA**

7/2005 – 8/2011 **Project Engineer**

- Managed Fabrication division engineering staff
- Developed applications for federal grants for small business development funding
- Compiled and analyzed data and submitted reports with recommendations to CEO and President
- Prepared and delivered presentations to internal and external groups
- Created and taught courses on technical skills to production workforce
- Designed processes to produce products to customer specifications
- Used CAD software to model system components and tooling

7/2003 – 7/2005 **Programmer**

- Used CAD software to model products to customer design
- Translated 3D models to machine code for production
- Managed programming and production schedules to meet customer demand

## **Technical Skills**

ESRI ArcGIS 10, ERDAS Imagine 2011, Java, Python 2.7, NetLogo 5.0.1, R, Matlab R2012